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**A CUMULATIVE INDEX
TO
A CONTINUING BIBLIOGRAPHY ON

AERONAUTICAL ENGINEERING**

This Cumulative Index supersedes the indexes contained in supplements [SP-7037(236) through SP-7037(247)] published by NASA during 1989.



National Aeronautics and Space Administration
Office of Management
Scientific and Technical Information Division
Washington, DC

1990

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INTRODUCTION

WHAT THIS CUMULATIVE INDEX IS

This publication is a cumulative index to the abstracts contained in NASA SP-7037(236) through NASA SP-7037(247) of *Aeronautical Engineering: A Continuing Bibliography*. NASA SP-7037, and its supplements have been compiled through the cooperative efforts of the American Institute of Aeronautics and Astronautics (AIAA), and the National Aeronautics and Space Administration (NASA). Entries prepared by the two contributing organizations are identified as follows:

1. NASA entries by their *STAR* accession numbers (N89-10000).
2. AIAA entries by their *IAA* accession numbers (A89-10000 series).

HOW THIS CUMULATIVE INDEX IS ORGANIZED

This Cumulative Index includes a subject, personal author, corporate source, foreign technology, contract number, report number, and accession number index.

HOW TO USE THE SUBJECT INDEX

Two types of cross-references appear in the subject index:

1. Use (U) references indicate that the subject term is not "postable," i.e., not a valid term, and that the following term or terms are used instead. For example:

AIRCRAFT PROTUBERANCES

U PROTUBERANCES

FLIGHT PERFORMANCE

U FLIGHT CHARACTERISTICS

2. Narrower Term (NT) references refer the user to more specific headings in the same subject area, under which additional material on the subject may be found. For example:

FLOW RESISTANCE

NT AERODYNAMIC DRAG

NT FRICTION DRAG

NT SUPERSONIC DRAG

In addition, a searcher may use the title or title and title extension in the index to narrow further his quest for particular items; this is because subject terms may include documents on different aspects of the same subject term. For example:

AIRLINE OPERATIONS

All-weather operations, including pilot role, instrument landing systems and guidance aids.

Airport congestion as constraint on air travel, considering runway capacity and adjusted demand.

HOW TO USE THE PERSONAL AUTHOR INDEX

All personal authors used in the abstract-section citations in the individual Supplements appear in the index. Differences in translation schemes may require multiple searching on the index for variants of an author's name. For example:

EMELIANOV, M. D.

and

YEMELYANOV, M. D.

HOW TO USE THE CORPORATE SOURCE INDEX

The corporate source index entries are abridged versions of the corporate sources used in the abstract-section citations in the individual Supplements. The corporate source supplementary (organizational component) does not appear in the index. For example:

BOEING CO., SEATTLE, WASH. MILITARY AIRCRAFT SYSTEMS DIV. (Source citation entry)

BOEING CO., SEATTLE, WASH. (Source index entry)

HOW TO USE THE FOREIGN TECHNOLOGY INDEX

The foreign technology index identifies research performed outside of the United States. Listings in this index are arranged alphabetically by country of intellectual origin. For example:

CHINA, PEOPLE'S REPUBLIC OF

HOW TO USE THE CONTRACT NUMBER INDEX

All contract numbers that are identified in the abstract-section citations in the individual Supplements appear in this index. Changes by agencies in the style in which contract numbers are presented may require multiple searching for variants. For example:

AF 33(615)-71-C-1758

F33615-71-C-1758

HOW TO USE THE REPORT/ACCESSION NUMBER INDEX

All report numbers that have been assigned by the corporate source, monitoring agency or cataloging activity appear in this index. Variations in cataloging may result in different report number series. For example:

TP-924

ONERA-TP-924

IDENTIFICATION OF DESIRED SUPPLEMENT

The abstract and descriptive cataloging for any accession number selected from the indexes may be found in the appropriate Supplement. The page-number range of each Supplement appears on the inside front cover of this index. Once the range of page numbers containing the selected accession number is located in the second column, the desired supplement number will be found in the first column. For example:

Page 150 will be found in Supplement 238

AVAILABILITY OF DOCUMENTS

Information concerning the availability of documents announced in *Aeronautical Engineering Supplements* is found in the Introduction to the most currently issued *Supplement*.

PUBLIC COLLECTIONS OF NASA DOCUMENTS

DOMESTIC: NASA and NASA-sponsored documents and a large number of aerospace publications are available to the public for reference purposes at the library maintained by the American Institute of Aeronautics and Astronautics, Technical Information Service, 555 West 57th Street, 12th Floor, New York, NY 10019.

EUROPEAN: An extensive collection of NASA and NASA-sponsored publications is maintained by the British Library Lending Division, Boston Spa, Wetherby, Yorkshire, England for public access. The British Library Lending Division also has available many of the non-NASA publications cited in *STAR*. European requesters may purchase facsimile copy or microfiche of NASA and NASA-sponsored documents, those identified by both the symbols # and * from ESA — Information Retrieval Service European Space Agency, 8-10 rue Mario-Nikis, 75738 CEDEX 15, France.

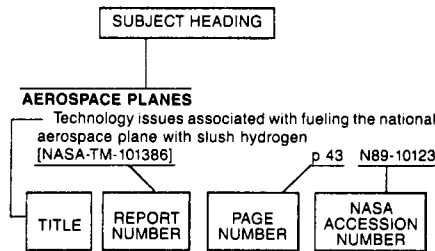
FEDERAL DEPOSITORY LIBRARY PROGRAM

In order to provide the general public with greater access to U.S. Government publications, Congress established the Federal Depository Library Program under the Government Printing Office (GPO), with 51 regional depositories responsible for permanent retention of material, inter-library loan, and reference services. At least one copy of nearly every NASA and NASA-sponsored publication, either in printed or microfiche format, is received and retained by the 51 regional depositories. A list of the regional GPO libraries, arranged alphabetically by state, appears on the inside back cover. These libraries are *not* sales outlets. A local library can contact a Regional Depository to help locate specific reports, or direct contact may be made by an individual.

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Typical Subject Index Listing



The subject heading is a key to the subject content of the document. The title is used to provide a description of the subject matter. When the title is insufficiently descriptive of document content, a title extension is added, separated from the title by three hyphens. The (NASA or AIAA) accession number and the page number are included in each entry to assist the user in locating the abstract in the abstract section. If applicable, a report number is also included as an aid in identifying the document. Under any one subject heading, the accession numbers are arranged in sequence with the AIAA accession numbers appearing first.

A

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- AIAA Computational Fluid Dynamics Conference, 9th, Buffalo, NY, June 13-15, 1989, Technical Papers
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- An adaptive Cartesian mesh algorithm for the Euler equations in arbitrary geometries
[AIAA PAPER 89-1930] p 572 A89-41777
- Solution of the 2D Navier-Stokes equations on unstructured adaptive grids
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- Development of a Navier-Stokes code on a Connection Machine
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- Far field numerical boundary conditions for internal and cascade flow computations
[AIAA PAPER 89-1943] p 573 A89-41790
- Turbulence models for 3D transonic viscous flows
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- An adaptive grid polygonal finite volume method for the compressible flow equations
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- International Conference on Numerical Methods in Fluid Dynamics, 11th, Williamsburg, VA, June 27-July 1, 1988, Proceedings
p 699 A89-45351
- Computational fluid dynamics - A personal view
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- A high resolution finite volume scheme for steady external transonic flow
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- Difference methods for initial-boundary-value problems and flow around bodies (Revised edition) --- Book
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- Modeling of controlled flight dynamics using in-flight simulators --- Russian book
p 688 A89-46546
- Application of an AI layer to an aerodynamic calculation code
[ONERA, TP NO. 1989-52] p 810 A89-48737
- AIAA Atmospheric Flight Mechanics Conference, Boston, MA, Aug. 14-16, 1989, Technical Papers
p 715 A89-49051
- Spreadsheet methods for aircraft design
[AIAA PAPER 89-2059] p 758 A89-49430
- A numerical method for calculating steady transonic flows with relaxation and heat input
p 734 A89-49600
- Calculation of an axisymmetric stream and analysis of flow in axial-flow turbine stages
p 741 A89-51024
- Encyclopedia of fluid mechanics. Volume 8 - Aerodynamics and compressible flows --- Book
p 804 A89-51275
- Advanced aerospace aerodynamics; Proceedings of the Aerospace Technology Conference and Exposition, Anaheim, CA, Oct. 3-6, 1988
[SAE SP-757] p 718 A89-51351
- A total variation diminishing scheme for computational aerodynamics
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- ### AEROSPACE ENGINEERING
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CONFERENCES

Adhesively bonded joints: Testing, analysis, and design; Proceedings of the International Symposium, Baltimore, MD, Sept. 10-12, 1988
p 45 A89-10076
Swedish Symposium on Residual Stresses, Sunne, Sweden, Mar. 30-Apr. 2, 1987, Proceedings
p 46 A89-10096
Turbulence management and relaminarisation; Proceedings of the IUTAM Symposium, Bangalore, India, Jan. 19-23, 1987
p 46 A89-10154
Advanced boundary element methods; Proceedings of the IUTAM Symposium, San Antonio, TX, Apr. 13-16, 1987
p 47 A89-10182

International Pacific Air and Space Technology Conference, Melbourne, Australia, Nov. 13-17, 1987, Proceedings
[SAE P-208] p 1 A89-10627

Aerospace avionics equipment and integration; Proceedings of the Second Conference, Dallas, TX, Nov. 2-4, 1987
[SAE P-205] p 48 A89-10676

Fracture mechanics; Proceedings of the Nineteenth National Symposium, San Antonio, TX, June 30-July 2, 1986
p 50 A89-11426

Automation applications for rotorcraft; Proceedings of the National Specialists' Meeting, Atlanta, GA, Apr. 4-6, 1988
p 2 A89-12401

Bird hazards in aviation; Proceedings of the Symposium, London, England, Oct. 14, 1987
p 3 A89-12716
ICAS, Congress, 16th, Jerusalem, Israel, Aug. 28-Sept. 2, 1988, Proceedings. Volumes 1 & 2
p 92 A89-13501

NOISE-CON 88 - Noise control design: Methods and practice; Proceedings of the National Conference on Noise Control Engineering, Purdue University, West Lafayette, IN, June 20-22, 1988
p 137 A89-15076
Radio Technical Commission for Aeronautics, Annual Assembly Meeting and Technical Symposium, Washington, DC, Nov. 17-19, 1987, Proceedings
p 62 A89-16201

AIAA/IEEE Digital Avionics Systems Conference, 8th, San Jose, CA, Oct. 17-20, 1988, Technical Papers, Parts 1 & 2
p 169 A89-18051

AHS, Annual Forum, 44th, Washington, DC, June 16-18, 1988, Proceedings
p 141 A89-18851

Aerospace simulation III; Proceedings of the SCS Multiconference, San Diego, CA, Feb. 3-5, 1988
p 142 A89-19551

Yearbook 1987 II; DGLR, Annual Meeting, Berlin, Federal Republic of Germany, Oct. 5-7, 1987, Reports
p 142 A89-20226

International Conference on Computational Engineering Mechanics, Beijing, People's Republic of China, June 21-25, 1987, Proceedings
p 253 A89-21132

Boundary elements X; Proceedings of the Tenth International Conference on Boundary Element Methods, Southampton, England, Sept. 6-9, 1988, Volume 2 - Heat transfer, fluid flow and electrical applications
p 253 A89-21277

International Symposium on Domain Decomposition Methods for Partial Differential Equations, 1st, Ecole Nationale des Ponts et Chaussees, Paris, France, Jan. 7-9, 1987, Proceedings
p 264 A89-24809

Civil avionics - The future international scene; Proceedings of the Symposium, London, England, Mar. 17, 1988
p 237 A89-24851

Numerical simulation of the transonic DFVLR-F5 wing experiment; Proceedings of the International Workshop on Numerical Simulation of Compressible Viscous-Flow Aerodynamics, Goettingen, Federal Republic of Germany, Sept. 30-Oct. 2, 1987
p 290 A89-25856

PLANS '88 - IEEE Position Location and Navigation Symposium, Orlando, FL, Nov. 29-Dec. 2, 1988, Record
p 339 A89-26701

International Instrumentation Symposium, 34th, Albuquerque, NM, May 2-6, 1988, Proceedings
p 348 A89-27651

Aerospace power systems technology; Proceedings of the Aerospace Technology Conference and Exposition, Anaheim, CA, Oct. 3-6, 1988
[SAE SP-758] p 324 A89-28254

National Technical Specialists' Meeting on Advanced Rotorcraft Structures, Williamsburg, VA, Oct. 25-27, 1988, Proceedings
p 359 A89-29451

AIAA, ASME, ASCE, AHS, and ASC, Structures, Structural Dynamics and Materials Conference, 30th, Mobile, AL, Apr. 3-5, 1989, Technical Papers, Parts 1, 2, 3, & 4
p 417 A89-30651

Detection, diagnosis and prognosis of rotating machinery to improve reliability, maintainability, and readiness through the application of new and innovative techniques
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Computational fluid dynamics; Proceedings of the International Symposium, Sydney, Australia, Aug. 23-27, 1987
p 420 A89-31301

High speed commercial flight: From inquiry to action; Proceedings of the Second Symposium, Columbus, OH, Oct. 19, 20, 1988
p 360 A89-31421

Symposium on Turbulence, 11th, University of Missouri-Rolla, Rolla, Oct. 17-19, 1988, Preprints
p 491 A89-33402

Remotely piloted vehicles; International Conference, 7th, Bristol, England, Sept. 12-14, 1988, Proceedings and Supplementary Papers
p 467 A89-33554

Advances and applications in computational fluid dynamics; Proceedings of the Symposium, ASME Winter Annual Meeting, Chicago, IL, Nov. 27-Dec. 2, 1988
p 443 A89-34726

- Heat transfer in gas turbine engines and three-dimensional flows; Proceedings of the Symposium, ASME Winter Annual Meeting, Chicago, IL, Nov. 27-Dec. 2, 1988 p 494 A89-34926
- AIAA Aerodynamic Decelerator Systems Technology Conference, 10th, Cocoa Beach, FL, Apr. 18-20, 1989, Technical Papers p 461 A89-35201
- International Conference on Satellite Systems for Mobile Communications and Navigation, 4th, London, England, Oct. 17-19, 1988, Proceedings p 552 A89-36576
- Airborne reconnaissance XII; Proceedings of the Meeting, San Diego, CA, Aug. 16, 17, 1988 [SPIE-979] p 567 A89-40251
- MILCOMP '88 - Military computers, graphics and software; Proceedings of the Conference and Exhibition, London, England, Sept. 27-29, 1988 p 629 A89-40425
- AIAA Computational Fluid Dynamics Conference, 9th, Buffalo, NY, June 13-15, 1989, Technical Papers p 572 A89-41776
- Research and development: Technical and scientific publications 1988 --- Book p 635 A89-42926
- Society of Flight Test Engineers, Annual Symposium, 19th, Arlington, TX, Aug. 14-18, 1988, Proceedings p 662 A89-45126
- 1988 report to the aerospace profession; Society of Experimental Test Pilots, Symposium, 32nd, Beverly Hills, CA, Oct. 13-15, 1988, Proceedings p 686 A89-45151
- International Conference on Numerical Methods in Fluid Dynamics, 11th, Williamsburg, VA, June 27-July 1, 1988, Proceedings p 699 A89-45351
- Radio Technical Commission for Aeronautics, Annual Assembly Meeting and Technical Symposium, Washington, DC, Nov. 28-30, 1988, Proceedings p 660 A89-45875
- Space age metals technology; Proceedings of the Second International SAMPE Metals and Metals Processing Conference, Dayton, OH, Aug. 2-4, 1988 p 696 A89-45927
- Aerospace Behavioral Technology Conference and Exposition, 7th, Anaheim, CA, Oct. 3-6, 1988, Proceedings [SAE P-216] p 638 A89-47326
- AIAA Applied Aerodynamics Conference, 7th, Seattle, WA, July 31-Aug. 2, 1989, Technical Papers p 719 A89-47626
- AIAA Flight Simulation Technologies Conference and Exhibit, Boston, MA, Aug. 14-16, 1989, Technical Papers p 785 A89-48376
- Flight simulation: Recent developments in technology and use; Proceedings of the Conference, London, England, Apr. 12, 13, 1988 p 790 A89-48826
- AIAA Atmospheric Flight Mechanics Conference, Boston, MA, Aug. 14-16, 1989, Technical Papers p 715 A89-49051
- ION, Annual Meeting, 44th, U.S. Naval Academy, Annapolis, MD, June 21-23, 1988, Proceedings p 751 A89-50301
- Aircraft Symposium, 26th, Sendai, Japan, Oct. 19-21, 1988, Proceedings p 718 A89-51301
- Advanced aerospace aerodynamics; Proceedings of the Aerospace Technology Conference and Exposition, Anaheim, CA, Oct. 3-6, 1988 [SAE SP-757] p 718 A89-51351
- Numerical methods for fluid dynamics III; Proceedings of the Conference, University of Oxford, England, Mar. 21-24, 1988 p 804 A89-51531
- AIAA Guidance, Navigation and Control Conference, Boston, MA, Aug. 14-16, 1989, Technical Papers. Parts 1 & 2 p 842 A89-52526
- Turbulent shear flows 6; International Symposium, 6th, Universite de Toulouse III, France, Sept. 7-9, 1987, Selected Papers p 861 A89-52943
- AHS National Specialists' Meeting on the Rotary Wing Aircraft Conceptual Design Process, Atlanta, GA, Apr. 3-5, 1989, Proceedings p 815 A89-52950
- 1989 American Control Conference, 8th, Pittsburgh, PA, June 21-23, 1989, Proceedings. Volumes 1, 2, & 3 p 874 A89-53951
- International Conference on Hypersonic Flight in the 21st Century, 1st, University of North Dakota, Grand Forks, Sept. 20-23, 1988, Proceedings p 855 A89-54326
- International Conference on the Aviation Weather Systems, 3rd, Anaheim, CA, Jan. 30-Feb. 3, 1989, Preprints p 867 A89-54776
- International Aerospace and Ground Conference on Lightning and Static Electricity [PB88-197439] p 55 A89-10429
- The 1987 Ground Vortex Workshop [NASA-CP-10008] p 15 A89-10849
- Turbine Engine Hot Section Technology 1986 [NASA-CP-2444] p 129 A89-12876
- Thermal Barrier Coatings. Abstracts and figures [NASA-CP-10019] p 185 A89-13642
- Aviation Safety Commission. Volume 1: Recommendations [PB88-209069] p 224 A89-15899
- The Traffic-Alert and Collision Avoidance System (TCAS) in the glass cockpit [NASA-TM-101036] p 238 A89-15911
- Intake Aerodynamics, volume 1 --- conference [VKI-LS-1988-04-VOL-1] p 298 A89-16738
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- Turbine Engine Hot Section Technology, 1987 [NASA-CP-2493] p 351 A89-17298
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- Validation of Computational Fluid Dynamics. Volume 2: Poster papers [AGARD-CP-437-VOL-2] p 424 A89-18648
- Toward improved durability in advanced aircraft engine hot sections [NASA-TM-4087] p 479 A89-20135
- Transonic Symposium: Theory, Application, and Experiment, Volume 1, Part 1 [NASA-CP-3020-VOL-1-PT-1] p 453 A89-20925
- Rotordynamic Instability Problems in High-Performance Turbomachinery, 1988 [NASA-CP-3026] p 558 A89-22891
- Calendar of selected aeronautical and space meetings [AGARD-CAL-88/2] p 566 A89-23361
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International Pacific Air and Space Technology Conference, Melbourne, Australia, Nov. 13-17, 1987, Proceedings
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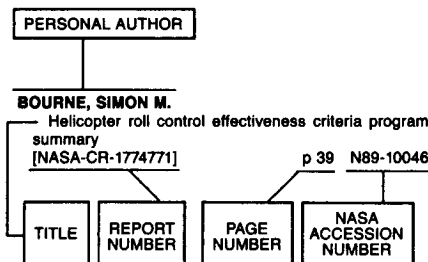
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International Conference on Numerical Methods in Fluid Dynamics, 11th, Williamsburg, VA, June 27-July 1, 1988, Proceedings p 699 A89-45351
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Radio Technical Commission for Aeronautics, Annual Assembly Meeting and Technical Symposium, Washington, DC, Nov. 17-19, 1987, Proceedings p 62 A89-16201

Radio Technical Commission for Aeronautics, Annual Assembly Meeting and Technical Symposium, Washington, DC, Nov. 28-30, 1988, Proceedings p 660 A89-45875

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High speed commercial flight: From inquiry to action; Proceedings of the Second Symposium, Columbus, OH, Oct. 19, 20, 1988
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Correction algorithms for differential GPS reference stations
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- ## M
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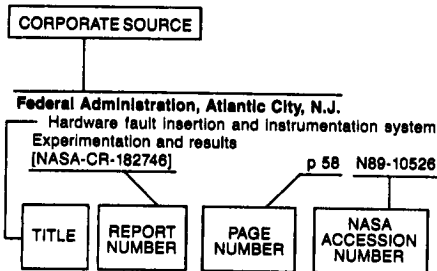
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- An analysis of Electronic Aids to Maintenance (EAM) for the Light Helicopter Family (LHX)
[AD-A205440] p 568 N89-23407

Henschel Flugzeug-Werke G.m.b.H., Kassel (Germany, F.R.).

- Locating and search procedures with helicopters for sea and/or air emergencies
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Huff (Ronald G.) and Associates, North Olmsted, OH.

- Noise generated by a flight weight, air flow control valve in a vertical takeoff and landing aircraft thrust vectoring system
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Huff and Associates, Cleveland, OH.

- Unsteady heat transfer in turbine blade ducts - Focus on combustor sources p 862 A89-53286

Hughes Aircraft Co., El Segundo, CA.

- Laser communication test system
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- High temperature adhesive systems
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- ITT Research Inst., Bartlesville, OK.**
Comparisons between unleaded automobile gasoline and aviation gasoline on valve seat recession in light aircraft engines
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- Illinois Inst. of Tech., Chicago.**
Management and control of separation by unsteady and vortical flows
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Management and control of unsteady and turbulent flows
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Equipment to upgrade the facilities of the IIT (Illinois Institute of Technology) Fluid Dynamics Research Center
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- Illinois Univ., Chicago.**
Review of FD-TD numerical modeling of electromagnetic wave scattering and radar cross section
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Electromagnetic scattering from a structured slab comprised of periodically placed resistive cards
[AD-A210145] p 806 N89-27953
- Illinois Univ., Urbana-Champaign.**
Impact of device level faults in a digital avionic processor
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Aerospace vehicle design, Spacecraft Section final project reports
[NASA-CR-184741] p 471 N89-20121
Aerospace vehicle design, Spacecraft Section final project reports
[NASA-CR-184742] p 472 N89-20122
Aerospace vehicle design, Spacecraft Section
[NASA-CR-184743] p 472 N89-20123
- Imperial Coll. of Science and Technology, London (England).**
Vortex/boundary layer interactions
[AIAA PAPER 89-0083] p 273 A89-25073
- Indian Inst. of Science, Bangalore.**
An experimental and analytical investigation of stall effects on flap-lag stability in forward flight
p 243 A89-23305
Prediction of inplane damping from deterministic and stochastic models
p 832 A89-52042
- Industrieanlagen-Betriebsgesellschaft m.b.H., Ottobrunn (Germany, F.R.).**
Crashworthiness of aircraft structures
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- Information and Control Systems, Inc., Hampton, VA.**
Application of precomputed control laws in a reconfigurable aircraft flight control system
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A variable-gain output feedback control design approach
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- Ingenieur a la Direction des Constructions Aeronautiques, Paris (France).**
Regulatory aspect of crashworthiness
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- Innovative Dynamics, Ithaca, NY.**
Distributed ice accretion sensor for smart aircraft structures
[AIAA PAPER 89-0772] p 311 A89-25571
- Institut de Mecanique des Fluides de Lille (France).**
Aircraft crashes on the runway: Development of a super element for nonlinear analysis of a beam
[REPT-87/56] p 54 N89-11286
Particular flight mechanics specifications related to wind tunnel test results
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Numerical and experimental study of the crash behavior of helicopters and aircraft
p 382 N89-18433
- Institut de Mecanique des Fluides de Marseille (France).**
Wind tunnel validation of aerodynamic field calculation codes for rotors and propellers in various flight conditions
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- Institut Franco-Allemand de Recherches, Saint-Louis (France).**
Base flow investigation behind axi- and non-axisymmetric blunt bodies
[ISL-CO-246/87] p 452 N89-20103
Vortices and pressure waves at plates, cylinders and wind profiles
[ISL-R-102/88] p 656 N89-25966
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Profile-vortex interactions
[ISL-R-125/87] p 822 N89-28495
- Measurements of mean-flow and turbulence characteristics in a turbojet exhaust using a laser velocimeter
[ISL-CO-226/88] p 841 N89-28519
Laser velocimetry in the close wake of an axisymmetric rear body
[ISL-R-114/87] p 865 N89-28774
- Institute for Computer Applications in Science and Engineering, Hampton, VA.**
International Conference on Numerical Methods in Fluid Dynamics, 11th, Williamsburg, VA, June 27-July 1, 1988, Proceedings
p 699 A89-45351
The inviscid axisymmetric stability of the supersonic flow along a circular cylinder
[NASA-CR-181816] p 519 N89-22574
- Institute for Defense Analyses, Alexandria, VA.**
The effect of technology on the supportability and cost of avionics equipment
[AD-A200450] p 238 N89-15912
Fighter aircraft design system user's manual
[AD-A200453] p 265 N89-16391
- Institute for Perception RVO-TNO, Soesterberg (Netherlands).**
Sound attenuation and speech transmission quality of five types of headsets
[IZF-1987-23] p 193 N89-14373
- Integrated Systems, Inc., Palo Alto, CA.**
RT-BUILD: An expert programmer for implementing and simulating Ada real-time control software
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Aircraft flight test trajectory control
[NASA-CR-4161] p 811 N89-27416
- Integrated Systems, Inc., Santa Clara, CA.**
A real-time expert system for self-repairing flight control
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- Iowa State Univ. of Science and Technology, Ames.**
A new PNS code for chemical nonequilibrium flows
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Three-dimensional dual-potential procedure for inlets and induct wind tunnels
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- Iowa Univ., Iowa City.**
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- IRIS Fiber Optics, Inc., Acton, MA.**
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- Israel Aircraft Industries Ltd., Lod.**
Efficient vibration mode analysis of aircraft with multiple external store configurations
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- J**
- JAI Associates, Mountain View, CA.**
Navier-Stokes calculations of hovering rotor flowfields
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Navier-Stokes simulation of unsteady three-dimensional blade-vortex interactions
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Unsteady interaction of a rotor with a vortex
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- Jeffers (James D., III), Tampa, FL.**
Aeroelastic thermal effects
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- Jet Propulsion Lab., California Inst. of Tech., Pasadena.**
Irreducible error rate in aeronautical satellite channels
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Airborne rain mapping radar
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Deriving a geocentric reference frame for satellite positioning and navigation
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- Determination of GPS orbits to submeter accuracy
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- Proceedings of the Mobile Satellite System Architectures and Multiple Access Techniques Workshop
[NASA-CR-184564] p 806 N89-27907
- Jiaotong Univ., Shanghai (China).**
Unsteady aerodynamic computational method of non-coplanar wing-tail combinations in subsonic flow
[PB89-111470] p 518 N89-22571
- Johns Hopkins Univ., Laurel, MD.**
Results of 1987 MSS helicopter propagation experiment at UHF and L band in Central Maryland
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- Johnson Aeronautics, Palo Alto, CA.**
Calculation of blade-vortex interaction airloads on helicopter rotors
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Wake model for helicopter rotors in high speed flight
[NASA-CR-177507] p 301 N89-17577
- Joint Inst. for Advancement of Flight Sciences, Hampton, VA.**
Asymptotic/numerical analysis of supersonic propeller noise
[AIAA PAPER 89-1078] p 501 A89-33722
Evaluation of parallel injector configurations for supersonic combustion
[AIAA PAPER 89-2525] p 678 A89-46898
An evaluation of active noise control in a cylindrical shell
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- Joint Publications Research Service, Arlington, VA.**
Effect of protective coatings on life of heat-resistant nickel steel under cyclic heat load
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Numerical simulation of transonic flow around Asuka
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- Kaiserslautern Univ. (Germany, F.R.).**
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Finite difference analysis of rotordynamic seal coefficients for an eccentric shaft position
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- Kansas Univ., Lawrence.**
Effects of compressibility on design of subsonic fuselages for natural laminar flow
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Design optimization of axisymmetric bodies in nonuniform transonic flow
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- Kansas Univ. Center for Research, Inc., Lawrence.**
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Investigation of a free-tip rotor configuration for research on spanwise life distributions and wake velocity surveys of a semi-span wing with a discontinuous twist
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[NASA-CR-4230] p 615 N89-23470
Spanwise lift distributions and wake velocity surveys of a semi-span wing with a discontinuous twist
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- Korean Inst. of Science and Technology, Seoul (South Korea).**
Plenum chamber effect on wind-tunnel resonance by the finite-element method
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Viscous effects on the resonance of a slotted wind tunnel using finite elements
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- Kunz Associates, Inc., Albuquerque, NM.**
Generalized three-dimensional experimental lightning code (G3DXL) user's manual
[NASA-CR-166079] p 428 N89-19779

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Lawrence Livermore National Lab., CA.

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A study of the sensitivity of stratospheric ozone to hypersonic aircraft emissions p 261 N89-15464
[DE89-001240]
Preventing depletion of stratospheric ozone: Implications on future aircraft emissions p 710 N89-25530
[DE89-00964]
Preventing depletion of stratospheric ozone: Implications on future aircraft emissions, revision 1 p 808 N89-27273
[DE89-013779]

Lear Siegler, Inc., Grand Rapids, MI.

- Stress analysis report for the Microwave Landing System (MLS) class V modification C-130 aircraft p 91 N89-11730
[AD-A196722]
Electrical load and power source capacity report for the C-130 aircraft Microwave Landing System (MLS) SLIASC model 6216 p 102 N89-11737
[AD-A196721]

Lehigh Univ., Bethlehem, PA.

- Unsteady structure of flow past a pitching delta wing p 86 N89-12541

Leicester Univ. (England).

- Flow field characteristics around bluff parachute canopies p 87 N89-12546
Aerodynamic drag of ridge arrays in adverse pressure gradients p 219 N89-15075
High Reynolds number incompressible flow simulation about parachute canopies and similar bluff bodies p 450 N89-20096

Lockheed Aeronautical Systems Co., Burbank, CA.

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Investigation of transport airplane fuselage fuel tank installations under crash conditions p 749 N89-27643
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Lockheed Aeronautical Systems Co., Marietta, GA.

- Near-field acoustic characteristics of a single-rotor propfan p 533 A89-36215
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Installed propfan (SR-7L) far-field noise characteristics [AIAA PAPER 89-1056] p 564 A89-36218
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Lockheed Engineering and Sciences Co., Houston, TX.

- Impact cratering in low-gravity environments - Results of reconnaissance experimentation on the NASA KC-135A reduced-gravity aircraft p 544 A89-36543

Lockheed-Georgia Co., Atlanta.

- A method of measuring fault latency in a digital flight control system p 170 A89-18060
[AIAA PAPER 88-3863]

Lockheed-Georgia Co., Marietta.

- Quadruplex digital flight control system assessment [NASA-CR-182741] p 40 N89-10058
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Multiple-Purpose Subsonic Naval Aircraft (MPSNA) Multiple Application Propfan Study (MAPS) p 395 N89-19289
[NASA-CR-175096]

Lockheed Missiles and Space Co., Huntsville, AL.

- Computation of turbulent incompressible wing-body junction flow p 310 A89-25236
[AIAA PAPER 89-0279]

Lockheed Missiles and Space Co., Palo Alto, CA.

- Windshear detection and avoidance - Airborne systems perspective p 134 A89-13506
Windshear avoidance - Requirements and proposed system for airborne lidar detection p 134 A89-15876

- Performance analysis and technical assessment of coherent lidar systems for airborne wind shear detection p 104 A89-15877
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Computational procedures for postbuckling of composite shells p 628 N89-24642

Logistics Management Inst., Bethesda, MD.

- The nature of the aircraft component failure process: A working note p 169 N89-14234
[AD-A197979]
Aircraft sustainability model version 1.5: Users manual p 638 N89-25949
[AD-A207015]

Loral Aircraft Braking Systems, Akron, OH.

- Analysis of low Reynolds number separation bubbles using semiempirical methods p 652 A89-47351

Loral Defense Systems, Akron, OH.

- Analysis of low Reynolds number separation bubbles using semiempirical methods p 652 A89-47351

Loughborough Univ. of Technology (England).

- Application of Forsythe method in stabilizing and decoupling speed and height in F4 phantom aircraft [ETN-89-93566] p 248 N89-15119

LTV Aerospace and Defense Co., Dallas, TX.

- The designer of the 90's: A live demonstration p 705 N89-25164

Lunar and Planetary Inst., Houston, TX.

- Advanced analytical facilities report of the planetary materials and geochemistry working group [NASA-CR-183338] p 117 N89-11786

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Manchester Univ. (England).

- Flow past bluff bodies p 517 N89-21770
An initial assessment of the impact of boundary layer control on SST p 656 N89-25969
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An introduction to the problem of aerodynamic heating [AERO-REPT-8901] p 656 N89-25970
A preliminary investigation into Euler methods for application to multi-element aerofoils for high lift [AERO-REPT-8710] p 708 N89-26196

Manudyn Systems, Inc., Los Altos, CA.

- Helicopter roll control effectiveness criteria program summary [NASA-CR-177477] p 39 N89-10046

Marine Corps, Washington, DC.

- Required Operational Capability (ROC) for a Portable Helicopter Lighting Set (PHLS) p 117 N89-11757
[AD-A196372]

Marquardt Corp., Van Nuys, CA.

- Heat transfer in gas turbine engines and three-dimensional flows: Proceedings of the Symposium, ASME Winter Annual Meeting, Chicago, IL, Nov. 27-Dec. 2, 1988 p 494 A89-34926

Maryland Univ., College Park.

- Aeroelastic optimization of a helicopter rotor p 163 A89-18898
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- Inviscid and viscous hypersonic aerodynamics: A review of the old and new p 823 N89-29308

Massachusetts Inst. of Tech., Cambridge.

- The measurement and control of helicopter blade modal response using blade-mounted accelerometers p 229 A89-23306
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- Nonlinear and adaptive control p 712 N89-26610
[NASA-CR-180088]

Massachusetts Inst. of Tech., Lexington.

- Preliminary results of the 1983 coordinated aircraft - Doppler weather radar turbulence experiment, volume 1 [AD-A197894] p 261 N89-15486

- Low-altitude wind shear detection with airport surveillance radars: Evaluation of 1987 field measurements p 262 N89-16243
[AD-A199189]
TDWR (Terminal Doppler Weather Radar) scan strategy requirements p 425 N89-19473
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- A preliminary study of precursors to Huntsville microbursts p 428 N89-19782
[AD-A200914]
ASR-9 weather channel test report, executive summary p 626 N89-23758
[DOT/FAA/PS-89/6-EXEC-SUMM]

- Selected wind shear events observed during the 1987 evaluation of enhancements to the FAA (Federal Aviation Administration) low level wind shear alert system at Stapleton International Airport p 710 N89-26323
[AD-A206711]

Materials Research Labs., Melbourne (Australia).

- Contamination of environmental control systems in Hercules aircraft p 29 N89-10040
[MRL-R-1116]

Max-Planck-Institut fuer Stromungsforschung, Goettingen (Germany, F.R.).

- The evaluation and representation of interferograms of transonic flow fields p 518 N89-21777
[MPIS-21/1987]
The aerodynamics of the interaction between vortices and bodies in a transonic flow p 566 N89-22445
[MPIS-3/1988]

- Calculation of aircraft noise in the vicinity of civil airports by a simulation procedure p 634 N89-24887
[MPIS-7/1988]

MCAT Inst., Moffett Field, CA.

- A fully-coupled implicit method for thermo-chemical nonequilibrium air at sub-orbital flight speeds p 576 A89-41818
[AIAA PAPER 89-1974]

McDonnell Aircraft Co., Saint Louis, MO.

- Hot gas ingestion testing of an advanced STOL concept in the NASA Lewis 9-by 15-foot Low Speed Wind Tunnel with flow visualization p 439 A89-33249
[AIAA PAPER 88-3025]

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- McDonnell-Douglas Astronautics Co., Saint Louis, MO.**
Average-passive simulation of counter-rotating propfan propulsion systems as applied to cruise missiles
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- McDonnell-Douglas Helicopter Co., Mesa, AZ.**
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- McDonnell-Douglas Research Labs., Saint Louis, MO.**
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- Melbourne Univ., Parkville (Australia).**
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- Mesoscale Environmental Simulations and Operations, Inc., Hampton, VA.**
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- Numerical simulations of an isolated microburst. I. - Dynamics and structure p 196 A89-20265
- Messerschmitt-Boelkow-Blohm G.m.b.H., Bremen (Germany, F.R.).**
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- Messerschmitt-Boelkow-Blohm G.m.b.H., Munich (Germany, F.R.).**
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- Miami Univ., Coral Gables, FL.**
Cockpit automation p 460 A89-34444
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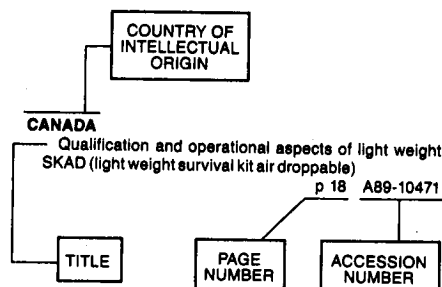
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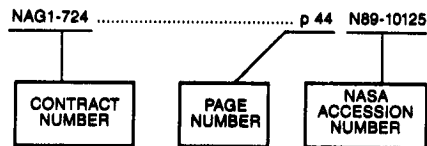
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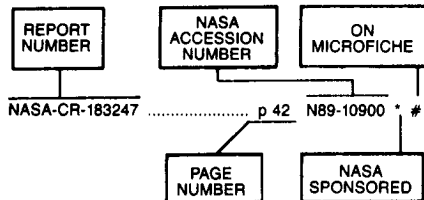
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AFIT/GAE/AA/88D-11	p 593	N89-23425	#	AFWAL-TR-88-2031	p 224	N89-15088	#	AIAA PAPER 88-3876	p 179	A89-18070	#
AFIT/GAE/AA/88D-23	p 458	N89-20987	#	AFWAL-TR-88-2036	p 252	N89-16053	#	AIAA PAPER 88-3877	p 179	A89-18071	#
AFIT/GAE/AA/88D-31	p 557	N89-22052	#	AFWAL-TR-88-2040	p 120	N89-12750	#	AIAA PAPER 88-3878	p 170	A89-18072	#
AFIT/GAE/AA/88D-33	p 594	N89-23427	#	AFWAL-TR-88-2046	p 490	N89-21125	#	AIAA PAPER 88-3882	p 179	A89-18076	#
AFIT/GAE/AA/88D-34	p 459	N89-20970	#	AFWAL-TR-88-2047	p 806	N89-27954	#	AIAA PAPER 88-3883	p 179	A89-18077	#
AFIT/GAE/AA/88D-35	p 498	N89-21282	#	AFWAL-TR-88-2049	p 490	N89-21130	#	AIAA PAPER 88-3887	p 170	A89-18080	#
AFIT/GAE/AA/88D-4	p 458	N89-20989	#	AFWAL-TR-88-2055	p 260	N89-16120	#	AIAA PAPER 88-3897	p 198	A89-18083	#
AFIT/GAE/AA/88S-1	p 498	N89-21270	#	AFWAL-TR-88-2081	p 548	N89-21943	#	AIAA PAPER 88-3899	p 170	A89-18085	#
AFIT/GAE/AA/89M-2	p 594	N89-23428	#	AFWAL-TR-88-2085	p 402	N89-19301	#	AIAA PAPER 88-3900	p 180	A89-18108	#
AFIT/GAE/AA/89M-4	p 595	N89-24270	#	AFWAL-TR-88-2096	p 563	N89-22366	#	AIAA PAPER 88-3901	p 171	A89-18109	#
				AFWAL-TR-88-2101	p 797	N89-26937	#	AIAA PAPER 88-3902	p 180	A89-18110	#
AFIT/GAE/ENG/88D-01	p 501	N89-21592	#	AFWAL-TR-88-3017	p 233	N89-15104	#	AIAA PAPER 88-3903	p 199	A89-18111	#
AFIT/GAE/ENG/88J-1	p 136	N89-12231	#	AFWAL-TR-88-3022	p 84	N89-11708	#	AIAA PAPER 88-3904	p 172	A89-18112	#
				AFWAL-TR-88-3024	p 484	N89-20976	#	AIAA PAPER 88-3905	p 199	A89-18086	#
AFIT/GAE/ENY/89J-2	p 821	N89-28490	#	AFWAL-TR-88-3026-VOL-1	p 412	N89-19374	#	AIAA PAPER 88-3907	p 199	A89-18087	#
AFIT/GAE/ENY/89J-3	p 864	N89-28755	#	AFWAL-TR-88-3026-VOL-2	p 412	N89-19379	#	AIAA PAPER 88-3908	p 199	A89-18088	#
				AFWAL-TR-88-3032	p 195	N89-14466	#	AIAA PAPER 88-3911	p 171	A89-18090	#
AFIT/GCA/LSQ/88S-6	p 360	N89-19226	#	AFWAL-TR-88-3050	p 222	N89-15891	#	AIAA PAPER 88-3915	p 171	A89-18092	#
				AFWAL-TR-88-3074	p 252	N89-16034	#	AIAA PAPER 88-3916	p 157	A89-18093	#
AFIT/GCS/ENG/88D-17	p 476	N89-20994	#	AFWAL-TR-88-3080	p 316	N89-17591	#	AIAA PAPER 88-3917	p 187	A89-18094	#
AFIT/GCS/ENG/88D-6	p 474	N89-20985	#	AFWAL-TR-88-3082	p 530	N89-21787	#	AIAA PAPER 88-3918	p 171	A89-18095	#
				AFWAL-TR-88-3085	p 459	N89-20971	#	AIAA PAPER 88-3919	p 171	A89-18096	#
AFIT/GE/ENG/88D-14	p 540	N89-21803	#	AFWAL-TR-88-3101	p 709	N89-26267	#	AIAA PAPER 88-3921	p 179	A89-18098	#
AFIT/GE/ENG/88D-19	p 484	N89-21000	#	AFWAL-TR-88-3119	p 608	N89-23457	#	AIAA PAPER 88-3922	p 179	A89-18099	#
AFIT/GE/ENG/88D-22	p 476	N89-20993	#	AFWAL-TR-88-4051	p 63	N89-12535	#	AIAA PAPER 88-3923	p 179	A89-18100	#
AFIT/GE/ENG/88D-28	p 466	N89-20980	#	AFWAL-TR-88-4062	p 129	N89-12864	#	AIAA PAPER 88-3924	p 180	A89-18101	#
AFIT/GE/ENG/88D-33	p 484	N89-21001	#	AFWAL-TR-88-4090	p 260	N89-16172	#	AIAA PAPER 88-3927	p 171	A89-18102	#
AFIT/GE/ENG/88D-38	p 475	N89-20989	#	AFWAL-TR-88-4260	p 512	N89-27464	#	AIAA PAPER 88-3928	p 174	A89-18188	#
AFIT/GE/ENG/89M-1	p 616	N89-23476	#	AFWAL-TR-89-2005	p 685	N89-26006	#	AIAA PAPER 88-3930	p 187	A89-18104	#
AFIT/GE/ENG/89M-5	p 616	N89-23475	#	AFWAL-TR-89-2008	p 865	N89-28835	#	AIAA PAPER 88-3931	p 187	A89-18105	#
				AFWAL-TR-89-3019	p 540	N89-21807	#	AIAA PAPER 88-3943	p 199	A89-18115	#

AIAA PAPER 88-3946	p 201	A89-19860	#	AIAA PAPER 89-0112	p 274	A89-25099	#	AIAA PAPER 89-0402	p 345	A89-25337	#
AIAA PAPER 88-3948	p 172	A89-18119	#	AIAA PAPER 89-0113	p 274	A89-25100	#	AIAA PAPER 89-0434	p 293	A89-26373	#
AIAA PAPER 88-3949	p 172	A89-18120	#	AIAA PAPER 89-0114	p 343	A89-25101	#	AIAA PAPER 89-0436	p 293	A89-26374	#
AIAA PAPER 88-3950	p 172	A89-18121	#	AIAA PAPER 89-0115	p 275	A89-25102	#	AIAA PAPER 89-0437	p 296	A89-28413	#
AIAA PAPER 88-3951	p 172	A89-18122	#	AIAA PAPER 89-0116	p 275	A89-25103	#	AIAA PAPER 89-0445	p 284	A89-25363	#
AIAA PAPER 88-3952	p 176	A89-18123	#	AIAA PAPER 89-0117	p 275	A89-25104	#	AIAA PAPER 89-0446	p 284	A89-25364	#
AIAA PAPER 88-3953	p 176	A89-18124	#	AIAA PAPER 89-0121	p 310	A89-25106	#	AIAA PAPER 89-0447	p 284	A89-25365	#
AIAA PAPER 88-3955	p 172	A89-18125	#	AIAA PAPER 89-0123	p 275	A89-25108	#	AIAA PAPER 89-0448	p 284	A89-25366	#
AIAA PAPER 88-3957	p 173	A89-18126	#	AIAA PAPER 89-0125	p 275	A89-25110	#	AIAA PAPER 89-0449	p 284	A89-25367	#
AIAA PAPER 88-3958	p 157	A89-18127	#	AIAA PAPER 89-0126	p 275	A89-25111	#	AIAA PAPER 89-0460	p 345	A89-25376	#
AIAA PAPER 88-3959	p 173	A89-18128	#	AIAA PAPER 89-0130	p 275	A89-25115	#	AIAA PAPER 89-0461	p 284	A89-25377	#
AIAA PAPER 88-3961	p 173	A89-18129	#	AIAA PAPER 89-0134	p 343	A89-25118	#	AIAA PAPER 89-0464	p 285	A89-25379	#
AIAA PAPER 88-3962	p 173	A89-18132	#	AIAA PAPER 89-0135	p 344	A89-25119	#	AIAA PAPER 89-0468	p 285	A89-25383	#
AIAA PAPER 88-3965	p 182	A89-18133	#	AIAA PAPER 89-0140	p 276	A89-25123	#	AIAA PAPER 89-0470	p 354	A89-25385	#
AIAA PAPER 88-3966	p 173	A89-18134	#	AIAA PAPER 89-0148	p 334	A89-25131	#	AIAA PAPER 89-0472	p 285	A89-25387	#
AIAA PAPER 88-3967	p 199	A89-18137	#	AIAA PAPER 89-0149	p 334	A89-25132	#	AIAA PAPER 89-0477	p 285	A89-25390	#
AIAA PAPER 88-3971	p 199	A89-18141	#	AIAA PAPER 89-0150	p 276	A89-25133	#	AIAA PAPER 89-0493	p 340	A89-25403	#
AIAA PAPER 88-3981	p 157	A89-18143	#	AIAA PAPER 89-0152	p 334	A89-25135	#	AIAA PAPER 89-0522	p 285	A89-25418	#
AIAA PAPER 88-3985	p 158	A89-18145	#	AIAA PAPER 89-0174	p 344	A89-25150	#	AIAA PAPER 89-0525	p 285	A89-25420	#
AIAA PAPER 88-3987	p 158	A89-18151	#	AIAA PAPER 89-0183	p 310	A89-25158	#	AIAA PAPER 89-0528	p 285	A89-25421	#
AIAA PAPER 88-3993	p 158	A89-18152	#	AIAA PAPER 89-0184	p 335	A89-25159	#	AIAA PAPER 89-0530	p 286	A89-25424	#
AIAA PAPER 88-3994	p 158	A89-18153	#	AIAA PAPER 89-0191	p 276	A89-25166	#	AIAA PAPER 89-0532	p 286	A89-25426	#
AIAA PAPER 88-3996	p 158	A89-18155	#	AIAA PAPER 89-0192	p 276	A89-25167	#	AIAA PAPER 89-0533	p 286	A89-25427	#
AIAA PAPER 88-3997	p 159	A89-18180	#	AIAA PAPER 89-0193	p 276	A89-25168	#	AIAA PAPER 89-0534	p 269	A89-25428	#
AIAA PAPER 88-3998	p 158	A89-18154	#	AIAA PAPER 89-0194	p 276	A89-25169	#	AIAA PAPER 89-0535	p 311	A89-25429	#
AIAA PAPER 88-3999	p 158	A89-18155	#	AIAA PAPER 89-0195	p 276	A89-25170	#	AIAA PAPER 89-0536	p 286	A89-25430	#
AIAA PAPER 88-4000	p 159	A89-18181	#	AIAA PAPER 89-0197	p 277	A89-25172	#	AIAA PAPER 89-0537	p 286	A89-25431	#
AIAA PAPER 88-4001	p 158	A89-18156	#	AIAA PAPER 89-0199	p 277	A89-25174	#	AIAA PAPER 89-0538	p 286	A89-25432	#
AIAA PAPER 88-4002	p 159	A89-18182	#	AIAA PAPER 89-0203	p 277	A89-25178	#	AIAA PAPER 89-0539	p 296	A89-28428	#
AIAA PAPER 88-4003	p 159	A89-18157	#	AIAA PAPER 89-0204	p 277	A89-25179	#	AIAA PAPER 89-0548	p 345	A89-25440	#
AIAA PAPER 88-4004	p 159	A89-18183	#	AIAA PAPER 89-0206	p 344	A89-25181	#	AIAA PAPER 89-0549	p 286	A89-25441	#
AIAA PAPER 88-4005	p 187	A89-18158	#	AIAA PAPER 89-0207	p 277	A89-25182	#	AIAA PAPER 89-0553	p 286	A89-25443	#
AIAA PAPER 88-4008	p 187	A89-18159	#	AIAA PAPER 89-0208	p 344	A89-25183	#	AIAA PAPER 89-0554	p 287	A89-25444	#
AIAA PAPER 88-4009	p 201	A89-19861	#	AIAA PAPER 89-0209	p 295	A89-28404	#	AIAA PAPER 89-0555	p 345	A89-25445	#
AIAA PAPER 88-4010	p 200	A89-18160	#	AIAA PAPER 89-0210	p 277	A89-25184	#	AIAA PAPER 89-0557	p 287	A89-25446	#
AIAA PAPER 88-4011	p 188	A89-18161	#	AIAA PAPER 89-0212	p 277	A89-25186	#	AIAA PAPER 89-0558	p 287	A89-25447	#
AIAA PAPER 88-4012	p 200	A89-18162	#	AIAA PAPER 89-0214	p 278	A89-25188	#	AIAA PAPER 89-0559	p 287	A89-25448	#
AIAA PAPER 88-4015	p 200	A89-18163	#	AIAA PAPER 89-0216	p 340	A89-25190	#	AIAA PAPER 89-0560	p 311	A89-25449	#
AIAA PAPER 88-4021	p 159	A89-18173	#	AIAA PAPER 89-0217	p 344	A89-25191	#	AIAA PAPER 89-0561	p 345	A89-25450	#
AIAA PAPER 88-4022	p 201	A89-19862	#	AIAA PAPER 89-0219	p 340	A89-25193	#	AIAA PAPER 89-0562	p 287	A89-25451	#
AIAA PAPER 88-4023	p 173	A89-18174	#	AIAA PAPER 89-0233	p 269	A89-25199	#	AIAA PAPER 89-0563	p 287	A89-25452	#
AIAA PAPER 88-4024	p 159	A89-18175	#	AIAA PAPER 89-0245	p 278	A89-25207	#	AIAA PAPER 89-0564	p 287	A89-25453	#
AIAA PAPER 88-4025	p 159	A89-18176	#	AIAA PAPER 89-0246	p 339	A89-25208	#	AIAA PAPER 89-0565	p 288	A89-25454	#
AIAA PAPER 88-4027	p 200	A89-18178	#	AIAA PAPER 89-0260	p 323	A89-25218	#	AIAA PAPER 89-0569	p 288	A89-25458	#
AIAA PAPER 88-4030	p 174	A89-18190	#	AIAA PAPER 89-0261	p 278	A89-25219	#	AIAA PAPER 89-0570	p 296	A89-28434	#
AIAA PAPER 88-4035	p 188	A89-18185	#	AIAA PAPER 89-0263	p 310	A89-25221	#	AIAA PAPER 89-0601	p 345	A89-25478	#
AIAA PAPER 88-4039	p 171	A89-18097	#	AIAA PAPER 89-0264	p 278	A89-25222	#	AIAA PAPER 89-0609	p 288	A89-25485	#
AIAA PAPER 88-4041	p 173	A89-18165	#	AIAA PAPER 89-0265	p 278	A89-25223	#	AIAA PAPER 89-0620	p 323	A89-25491	#
AIAA PAPER 88-4042	p 200	A89-18166	#	AIAA PAPER 89-0266	p 278	A89-25224	#	AIAA PAPER 89-0622	p 288	A89-25492	#
AIAA PAPER 88-4044	p 142	A89-19864	#	AIAA PAPER 89-0267	p 278	A89-25225	#	AIAA PAPER 89-0623	p 323	A89-25493	#
AIAA PAPER 88-4066	p 101	A89-16524	#	AIAA PAPER 89-0268	p 279	A89-25226	#	AIAA PAPER 89-0624	p 323	A89-25494	#
AIAA PAPER 88-4664	p 108	A89-13725	#	AIAA PAPER 89-0269	p 279	A89-25227	#	AIAA PAPER 89-0637	p 296	A89-28442	#
AIAA PAPER 89-0003	p 270	A89-25002	#	AIAA PAPER 89-0270	p 279	A89-25228	#	AIAA PAPER 89-0638	p 296	A89-28443	#
AIAA PAPER 89-0004	p 364	A89-29924	#	AIAA PAPER 89-0271	p 279	A89-25230	#	AIAA PAPER 89-0639	p 288	A89-25505	#
AIAA PAPER 89-0005	p 271	A89-25003	#	AIAA PAPER 89-0272	p 279	A89-25231	#	AIAA PAPER 89-0640	p 311	A89-25506	#
AIAA PAPER 89-0007	p 325	A89-28403	#	AIAA PAPER 89-0274	p 279	A89-25232	#	AIAA PAPER 89-0641	p 288	A89-25507	#
AIAA PAPER 89-0008	p 322	A89-25004	#	AIAA PAPER 89-0275	p 310	A89-25236	#	AIAA PAPER 89-0642	p 296	A89-28444	#
AIAA PAPER 89-0009	p 322	A89-25005	#	AIAA PAPER 89-0279	p 279	A89-25237	#	AIAA PAPER 89-0644	p 311	A89-25509	#
AIAA PAPER 89-0010	p 322	A89-25006	#	AIAA PAPER 89-0280	p 280	A89-25238	#	AIAA PAPER 89-0645	p 331	A89-25510	#
AIAA PAPER 89-0012	p 331	A89-25008	#	AIAA PAPER 89-0281	p 280	A89-25242	#	AIAA PAPER 89-0647	p 335	A89-25511	#
AIAA PAPER 89-0013	p 310	A89-25009	#	AIAA PAPER 89-0285	p 280	A89-25244	#	AIAA PAPER 89-0648	p 335	A89-25512	#
AIAA PAPER 89-0015	p 331	A89-25011	#	AIAA PAPER 89-0287	p 280	A89-25245	#	AIAA PAPER 89-0649	p 357	A89-25513	#
AIAA PAPER 89-0016	p 331	A89-25012	#	AIAA PAPER 89-0288	p 280	A89-25248	#	AIAA PAPER 89-0650	p 288	A89-25514	#
AIAA PAPER 89-0017	p 331	A89-25013	#	AIAA PAPER 89-0289	p 280	A89-25249	#	AIAA PAPER 89-0654	p 289	A89-25517	#
AIAA PAPER 89-0018	p 331	A89-25014	#	AIAA PAPER 89-0291	p 280	A89-25252	#	AIAA PAPER 89-0658	p 289	A89-25521	#
AIAA PAPER 89-0020	p 271	A89-25016	#	AIAA PAPER 89-0295	p 281	A89-25255	#	AIAA PAPER 89-0664	p 345	A89-25526	#
AIAA PAPER 89-0021	p 271	A89-25017	#	AIAA PAPER 89-0296	p 281	A89-25253	#	AIAA PAPER 89-0669	p 289	A89-25530	#
AIAA PAPER 89-0022	p 271	A89-25018	#	AIAA PAPER 89-0314	p 293	A89-26368	#	AIAA PAPER 89-0671	p 289	A89-25532	#
AIAA PAPER 89-0023	p 271	A89-25019	#	AIAA PAPER 89-0321	p 293	A89-26369	#	AIAA PAPER 89-0672	p 323	A89-25533	#
AIAA PAPER 89-0024	p 271	A89-25020	#	AIAA PAPER 89-0322	p 295	A89-28406	#	AIAA PAPER 89-0674	p 289	A89-25534	#
AIAA PAPER 89-0025	p 272	A89-25021	#	AIAA PAPER 89-0323	p 281	A89-25273	#	AIAA PAPER 89-0704	p 302	A89-25545	#
AIAA PAPER 89-0026	p 272	A89-25022	#	AIAA PAPER 89-0325	p 281	A89-25274	#	AIAA PAPER 89-0706	p 305	A89-28448	#
AIAA PAPER 89-0027	p 272	A89-25023	#	AIAA PAPER 89-0327	p 344	A89-25275	#	AIAA PAPER 89-0707	p 302	A89-25547	#
AIAA PAPER 89-0028	p 272	A89-25024	#	AIAA PAPER 89-0328	p 281	A89-25276	#	AIAA PAPER 89-0710	p 352	A89-25549	#
AIAA PAPER 89-0029	p 272	A89-25025	#	AIAA PAPER 89-0337	p 281	A89-25284	#	AIAA PAPER 89-0732	p 379	A89-30850	#
AIAA PAPER 89-0030	p 272	A89-25026	#	AIAA PAPER 89-0338	p 281	A89-25285	#	AIAA PAPER 89-0734	p 305	A89-28451	#
AIAA PAPER 89-0032	p 272	A89-25028	#	AIAA PAPER 89-0339	p 282	A89-25286	#	AIAA PAPER 89-0735	p 302	A89-25553	#
AIAA PAPER 89-0036	p 272	A89-25031	#	AIAA PAPER 89-0341	p 282	A89-25288	#	AIAA PAPER 89-0737	p 346	A89-25554	#
AIAA PAPER 89-0041	p 334	A89-25035	#	AIAA PAPER 89-0343	p 293	A89-26371	#	AIAA PAPER 89-0738	p 302	A89-25555	#
AIAA PAPER 89-0042	p 334	A89-25036	#	AIAA PAPER 89-0353	p 282	A89-25298	#	AIAA PAPER 89-0739	p 303	A89-25556	#
AIAA PAPER 89-0043	p 273	A89-25037	#	AIAA PAPER 89-0354	p 282	A89-25299	#	AIAA PAPER 89-0741	p 303	A89-25557	#
AIAA PAPER 89-0045	p 273	A89-25039	#	AIAA PAPER 89-0355	p 282	A89-25300	#	AIAA PAPER 89-0743	p 303	A89-25558	#
AIAA PAPER 89-0046	p 273	A89-25040	#	AIAA PAPER 89-0356	p 282	A89-25301	#	AIAA PAPER 89-0750	p 303	A89-25560	#
AIAA PAPER 89-0047	p 310	A89-25041	#	AIAA PAPER 89-0357	p 296	A89-28407	#	AIAA PAPER 89-0752	p 297	A89-28453	#
AIAA PAPER 89-0048	p 334	A89-25042	#	AIAA PAPER 89-0361	p 353	A89-25305	#	AIAA PAPER 89-0753	p 303	A89-25561	#
AIAA PAPER 89-0074	p 343	A89-25065	#	AIAA PAPER 89-0362	p 282	A89-25306	#	AIAA PAPER 89-0754	p 333	A89-28454	#
AIAA PAPER 89-0081	p 273	A89-25071	#	AIAA PAPER 89-0363	p 344	A89-25307	#	AIAA PAPER 89-0755	p 336	A89-28455	#
AIAA PAPER 89-0082	p 273	A89-25072	#	AIAA PAPER 89-0364	p 283	A89-25308	#	AIAA PAPER 89-0756	p 352	A89-25562	#
AIAA PAPER 89-0083	p 273	A89-25073	#	AIAA PAPER 89-0365	p 283	A89-25309	#	AIAA PAPER 89-0757	p 303	A89-25563	#

AIAA PAPER 89-0769	p 346	A89-25570	*	#	AIAA PAPER 89-1074	p 468	A89-33719	#	AIAA PAPER 89-1375	p 391	A89-30850	#	
AIAA PAPER 89-0772	p 311	A89-25571	*	#	AIAA PAPER 89-1075	p 469	A89-33720	#	AIAA PAPER 89-1376	p 419	A89-30851	*	#
AIAA PAPER 89-0773	p 337	A89-28458	#		AIAA PAPER 89-1076	p 469	A89-33721	#	AIAA PAPER 89-1377	p 527	A89-37650	#	
AIAA PAPER 89-0774	p 311	A89-25572	#		AIAA PAPER 89-1077	p 565	A89-37652	#	AIAA PAPER 89-1378	p 391	A89-30852	#	
AIAA PAPER 89-0787	p 352	A89-25578	#		AIAA PAPER 89-1078	p 501	A89-33722	*	AIAA PAPER 89-1384	p 419	A89-30857	*	#
AIAA PAPER 89-0794	p 352	A89-25583	#		AIAA PAPER 89-1079	p 502	A89-33723	#	AIAA PAPER 89-1385	p 391	A89-30858	*	#
AIAA PAPER 89-0795	p 304	A89-25584	#		AIAA PAPER 89-1080	p 632	A89-40474	#	AIAA PAPER 89-1386	p 404	A89-30859	*	#
AIAA PAPER 89-0797	p 304	A89-25585	#		AIAA PAPER 89-1081	p 502	A89-33724	*	AIAA PAPER 89-1387	p 400	A89-30860	#	
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DOT/FAA/CT-TN89/45	p 793	N89-26868	#	E-4227	p 558	N89-22891	* #	ELS-TR-716199-12	p 496	N89-20363	* #
DOT/FAA/CT-TN89/4	p 600	N89-23438	#	E-4232	p 42	N89-10111	* #	EMA-88-R-1	p 261	N89-15485	* #
DOT/FAA/CT-86/30-REV	p 40	N89-10058	* #	E-4250	p 220	N89-15078	* #	ESA-TT-1088	p 14	N89-10026	#
DOT/FAA/CT-86/34	p 58	N89-10526	* #	E-4260	p 38	N89-10043	* #	ESA-TT-1097	p 220	N89-15083	#
DOT/FAA/CT-87/26	p 54	N89-11265	#	E-4275	p 120	N89-12717	* #	ESA-TT-1104	p 250	N89-15160	#
DOT/FAA/CT-87/31	p 156	N89-13418	#	E-4282	p 85	N89-11717	* #	ESA-TT-1114	p 249	N89-15127	#
DOT/FAA/CT-87/37	p 38	N89-10894	#	E-4286	p 88	N89-12553	* #	ESA-TT-1145	p 693	N89-25243	#
DOT/FAA/CT-87/38	p 156	N89-13415	#	E-4301	p 44	N89-10156	* #	ESD-TR-88-024	p 526	N89-21785	#
DOT/FAA/CT-88/05	p 44	N89-10179	#	E-4340	p 60	N89-10603	* #	ESD-TR-88-031	p 542	N89-21813	#
DOT/FAA/CT-88/13	p 44	N89-10175	#	E-4374	p 219	N89-15077	* #	ESDU-88006	p 297	N89-16730	#
DOT/FAA/CT-88/16	p 29	N89-10041	#	E-4380	p 175	N89-13429	* #	ESDU-88013	p 297	N89-16731	#
DOT/FAA/CT-88/23	p 38	N89-10892	#	E-4382	p 222	N89-15896	* #	ESDU-88025	p 298	N89-16732	#
DOT/FAA/CT-88/24	p 749	N89-27643	#	E-4393	p 241	N89-15913	* #	ESDU-88029	p 298	N89-16734	#
DOT/FAA/CT-88/25-VOL-1	p 227	N89-15100	#	E-4399	p 223	N89-15897	* #	ESDU-88030	p 298	N89-16735	#
DOT/FAA/CT-88/25-VOL-2	p 227	N89-15101	#	E-4402	p 177	N89-13432	* #	ESDU-88031	p 298	N89-16736	#
DOT/FAA/CT-88/27	p 524	N89-22594	#	E-4422	p 109	N89-12567	* #	ESL-TR-88-52	p 694	N89-26020	#
DOT/FAA/CT-88/31	p 707	N89-26120	#	E-4425	p 185	N89-13642	* #	ESL-720964-2	p 495	N89-20355	* #
DOT/FAA/CT-88/6	p 56	N89-11356	#	E-4430	p 178	N89-14238	* #	ETN-88-92107	p 108	N89-11746	#
DOT/FAA/CT-89/14-VOL-1	p 601	N89-24292	#	E-4433	p 137	N89-12309	* #	ETN-88-93051	p 14	N89-10026	#
DOT/FAA/CT-89/14-VOL-2	p 661	N89-25986	#	E-4434	p 87	N89-12552	* #	ETN-88-93094	p 4	N89-10839	#
DOT/FAA/CT-89/4	p 694	N89-26018	#	E-4435	p 129	N89-12845	* #	ETN-88-93101	p 54	N89-11286	#
DOT/FAA/CT-89/5	p 776	N89-26851	#	E-4437	p 267	N89-15686	* #	ETN-88-93105	p 17	N89-10859	#
DOT/FAA/CT-89/6	p 841	N89-28516	#	E-4445	p 43	N89-10123	* #	ETN-88-93107	p 53	N89-11184	#
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ETN-88-93562	p 103	N89-11744	#	ETN-89-94562	p 854	N89-28522	#	H-1398	p 372	N89-18418	* #
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ETN-89-93539	p 339	N89-17601	#	ETN-89-94643	p 693	N89-25243	#	H-1449	p 177	N89-13435	* #
ETN-89-93566	p 246	N89-15119	#	ETN-89-94645	p 602	N89-24295	#	H-1492	p 261	N89-16196	* #
ETN-89-93590	p 328	N89-16825	#	ETN-89-94648	p 706	N89-25358	#	H-1495	p 235	N89-15908	* #
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ETN-89-93592	p 298	N89-16738	#	ETN-89-94853	p 656	N89-25966	#	H-1504	p 236	N89-15909	* #
ETN-89-93593	p 299	N89-16748	#	ETN-89-94855	p 665	N89-28774	#	H-1510	p 766	N89-26844	* #
ETN-89-93610	p 299	N89-16756	#	ETN-89-94856	p 822	N89-28494	#	H-1514	p 194	N89-14456	* #
ETN-89-93634	p 220	N89-15083	#	ETN-89-94858	p 822	N89-28495	#	H-1520	p 168	N89-13424	* #
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ETN-89-93660	p 226	N89-15095	#	ETN-89-94940	p 793	N89-26870	#	H-1530	p 474	N89-20983	* #
ETN-89-93671	p 408	N89-19319	#	ETN-89-94950	p 708	N89-26196	#				
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ETN-89-93676	p 401	N89-18489	#	ETN-89-94956	p 656	N89-25970	#				
ETN-89-93677	p 412	N89-18546	#	ETN-89-94958	p 823	N89-28501	#	HJB-850281	p 557	N89-22016	#
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ETN-89-93690	p 403	N89-19303	#	ETN-89-95314	p 823	N89-28505	#				
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ETN-89-93704	p 403	N89-19307	#	FAA-APO-89-1	p 638	N89-25948	#	ICASE-88-64	p 153	N89-13408	* #
ETN-89-93705	p 403	N89-19308	#	FAA-APO-89-5	p 750	N89-27644	#	ICASE-89-19	p 519	N89-22574	* #
ETN-89-93757	p 226	N89-15096	#								
ETN-89-93765	p 537	N89-22608	#	FAA-EE-88-4	p 197	N89-14616	#	ICOMP-89-19	p 866	N89-29726	* #
ETN-89-93769	p 531	N89-22600	#	FAA-EE-88-5	p 499	N89-20557	#	ID-6216-032	p 102	N89-11737	#
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NAS 1.15:101398	p 120	N89-12717 *	NAS 1.15:102407	p 58	N89-10524 *	NAS 1.26:181743	p 452	N89-20922 *
NAS 1.15:101406	p 562	N89-22939 *	NAS 1.15:10407	p 151	N89-13396 *	NAS 1.26:181744	p 450	N89-20093 *
NAS 1.15:101407	p 267	N89-15685 *	NAS 1.15:10405	p 86	N89-12542 *	NAS 1.26:181749	p 153	N89-13408 *
NAS 1.15:101412	p 219	N89-15077 *	NAS 1.15:10406	p 15	N89-10842 *	NAS 1.26:181762	p 464	N89-20111 *
NAS 1.15:101413	p 88	N89-12555 *	NAS 1.15:10407	p 151	N89-13395 *	NAS 1.26:181766	p 627	N89-23920 *
NAS 1.15:101414	p 259	N89-15437 *	NAS 1.15:10472	p 628	N89-24624 *	NAS 1.26:181769	p 500	N89-20683 *
NAS 1.15:101416	p 109	N89-12568 *	NAS 1.15:10477	p 136	N89-12234 *	NAS 1.26:181787	p 707	N89-25480 *
NAS 1.15:101420	p 178	N89-14237 *	NAS 1.15:10478	p 268	N89-15886 *	NAS 1.26:181788	p 714	N89-26683 *
NAS 1.15:101421	p 195	N89-14470 *	NAS 1.15:10480	p 154	N89-14217 *	NAS 1.26:181789	p 813	N89-27466 *
NAS 1.15:101427	p 246	N89-15121 *	NAS 1.15:10483	p 241	N89-15112 *	NAS 1.26:181790	p 876	N89-29152 *
NAS 1.15:101431	p 193	N89-13794 *	NAS 1.15:10484	p 236	N89-15910 *	NAS 1.26:181791	p 876	N89-29154 *
NAS 1.15:101433	p 178	N89-14239 *	NAS 1.15:10487	p 479	N89-20135 *	NAS 1.26:181792	p 813	N89-27468 *
NAS 1.15:101434	p 153	N89-13412 *	NAS 1.15:10489	p 246	N89-15116 *	NAS 1.26:181793	p 486	N89-21004 *
NAS 1.15:101437	p 153	N89-13409 *	NAS 1.15:10490	p 184	N89-14241 *	NAS 1.26:181802	p 472	N89-20125 *
NAS 1.15:101441	p 221	N89-15084 *	NAS 1.15:10494	p 235	N89-15905 *	NAS 1.26:181806	p 483	N89-20999 *
NAS 1.15:101470	p 499	N89-21417 *	NAS 1.15:10495	p 433	N89-19899 *	NAS 1.26:181808	p 543	N89-22616 *
NAS 1.15:101475	p 342	N89-17017 *	NAS 1.15:10496	p 374	N89-19231 *	NAS 1.26:181816	p 519	N89-22574 *
NAS 1.15:101480	p 633	N89-24886 *	NAS 1.15:10499	p 247	N89-15925 *	NAS 1.26:181817	p 765	N89-26841 *
NAS 1.15:101491	p 41	N89-10060 *	NAS 1.15:10500	p 516	N89-21762 *	NAS 1.26:181819	p 633	N89-24141 *
NAS 1.15:101496	p 40	N89-10059 *	NAS 1.15:10505	p 408	N89-18500 *	NAS 1.26:181841	p 745	N89-26815 *
NAS 1.15:101501	p 186	N89-14264 *	NAS 1.15:10508	p 539	N89-21802 *	NAS 1.26:181842	p 657	N89-25973 *
NAS 1.15:101512	p 234	N89-15110 *	NAS 1.15:10510	p 496	N89-20409 *	NAS 1.26:181868	p 793	N89-26869 *
NAS 1.15:101521	p 601	N89-24293 *	NAS 1.15:10511	p 451	N89-20099 *	NAS 1.26:181871	p 794	N89-27674 *
NAS 1.15:101523	p 234	N89-15108 *	NAS 1.15:10511	p 594	N89-23433 *	NAS 1.26:182133	p 192	N89-13754 *
NAS 1.15:101530	p 221	N89-15087 *	NAS 1.15:10512	p 517	N89-21768 *	NAS 1.26:182164	p 478	N89-20132 *
NAS 1.15:101531	p 372	N89-18415 *	NAS 1.15:10513	p 592	N89-23410 *	NAS 1.26:182180	p 151	N89-13399 *
NAS 1.15:101539	p 428	N89-19783 *	NAS 1.15:10514	p 542	N89-22614 *	NAS 1.26:182181	p 109	N89-11750 *
NAS 1.15:101543	p 222	N89-15895 *	NAS 1.15:10516	p 606	N89-23447 *	NAS 1.26:182203	p 109	N89-12566 *
NAS 1.15:101547	p 450	N89-20094 *	NAS 1.15:10519	p 630	N89-24079 *	NAS 1.26:182207	p 192	N89-13755 *
NAS 1.15:101549	p 558	N89-22868 *	NAS 1.15:10524	p 744	N89-26810 *	NAS 1.26:182211	p 109	N89-12567 *
NAS 1.15:101550	p 504	N89-20777 *	NAS 1.15:10529	p 807	N89-27995 *	NAS 1.26:182224	p 109	N89-11751 *
NAS 1.15:101553	p 473	N89-20982 *	NAS 1.15:10538	p 821	N89-28486 *	NAS 1.26:182226	p 234	N89-15107 *
NAS 1.15:101554	p 706	N89-25443 *	NAS 1.15:10543	p 194	N89-14386 *	NAS 1.26:182233	p 330	N89-17599 *
NAS 1.15:101557	p 451	N89-20101 *	NAS 1.15:10549	p 377	N89-19265 *	NAS 1.26:182241	p 193	N89-13819 *
NAS 1.15:101569	p 475	N89-20991 *	NAS 1.15:10557	p 193	N89-13816 *	NAS 1.26:182245	p 452	N89-20921 *
NAS 1.15:101570	p 609	N89-24313 *	NAS 1.15:10568	p 823	N89-29305 *	NAS 1.26:182257-VOL-1	p 633	N89-24139 *
NAS 1.15:101572	p 617	N89-24324 *	NAS 1.15:10573	p 372	N89-18418 *	NAS 1.26:182267	p 478	N89-20134 *
NAS 1.15:101573	p 671	N89-25232 *	NAS 1.15:10574	p 17	N89-10865 *	NAS 1.26:182302	p 784	N89-27672 *
NAS 1.15:101574	p 608	N89-24308 *	NAS 1.15:10579	p 378	N89-19266 *	NAS 1.26:182303	p 685	N89-26004 *
NAS 1.15:101579	p 635	N89-25112 *	NAS 1.15:10582	p 23	N89-10872 *	NAS 1.26:182511	p 221	N89-15086 *
NAS 1.15:101582	p 609	N89-24314 *	NAS 1.15:10583	p 154	N89-14216 *	NAS 1.26:182513	p 133	N89-12923 *
NAS 1.15:101583	p 690	N89-25239 *	NAS 1.15:10584	p 504	N89-20776 *	NAS 1.26:182673	p 220	N89-15082 *
NAS 1.15:101584	p 690	N89-26010 *	NAS 1.15:10592	p 568	N89-23406 *	NAS 1.26:182741	p 40	N89-10058 *
NAS 1.15:101592	p 807	N89-28035 *						

NAS 1.26:182746	p 58	N89-10526 *	NAS 1.55:2444	p 129	N89-12876 *	NASA-CR-177478	p 114	N89-11752 *
NAS 1.26:182818	p 489	N89-20205 *	NAS 1.55:2493	p 351	N89-17298 *	NASA-CR-177507	p 301	N89-17577 *
NAS 1.26:182994	p 63	N89-12538 *	NAS 1.55:3020-VOL-1-PT-1	p 453	N89-20925 *	NASA-CR-177515	p 618	N89-24328 *
NAS 1.26:183004	p 119	N89-11827 *	NAS 1.55:3020-VOL-1-PT-2	p 455	N89-20942 *	NASA-CR-177523	p 592	N89-23414 *
NAS 1.26:183007	p 219	N89-15074 *	NAS 1.55:3022-PT-1	p 374	N89-19234 *	NASA-CR-177524	p 459	N89-20973 *
NAS 1.26:183041	p 156	N89-13414 *	NAS 1.55:3022-PT-2	p 376	N89-19247 *	NASA-CR-177529	p 671	N89-25233 *
NAS 1.26:183057	p 41	N89-10897 *	NAS 1.55:3026	p 558	N89-22891 *	NASA-CR-177530	p 671	N89-25235 *
NAS 1.26:183178	p 356	N89-18167 *	NAS 1.55:3027	p 592	N89-23415 *	NASA-CR-177532	p 653	N89-25122 *
NAS 1.26:183245	p 40	N89-10895 *	NAS 1.55:3028	p 361	N89-19230 *	NASA-CR-178216	p 424	N89-18665 *
NAS 1.26:183247	p 42	N89-10900 *	NAS 1.55:3031-PT-1	p 666	N89-25146 *	NASA-CR-178217	p 426	N89-19505 *
NAS 1.26:183273	p 167	N89-13422 *	NAS 1.55:3031-PT-2	p 669	N89-25173 *	NASA-CR-178409	p 766	N89-26842 *
NAS 1.26:183305	p 30	N89-10890 *	NAS 1.55:3031-PT-3	p 670	N89-25201 *	NASA-CR-179425	p 161	N89-14228 *
NAS 1.26:183311	p 114	N89-12570 *	NAS 1.55:3034-PT-2	p 628	N89-24654 *	NASA-CR-179439	p 194	N89-14456 *
NAS 1.26:183338	p 117	N89-11786 *	NAS 1.60:2822	p 248	N89-15929 *	NASA-CR-179454	p 426	N89-19556 *
NAS 1.26:183356	p 117	N89-12572 *	NAS 1.60:2828	p 13	N89-10024 *	NASA-CR-179477	p 252	N89-15251 *
NAS 1.26:183381	p 408	N89-18498 *	NAS 1.60:2832	p 595	N89-24264 *	NASA-CR-179519	p 129	N89-12837 *
NAS 1.26:183389	p 609	N89-24315 *	NAS 1.60:2835	p 265	N89-16437 *	NASA CR-179544	p 178	N89-13437 *
NAS 1.26:183392	p 194	N89-14377 *	NAS 1.60:2837	p 90	N89-11726 *	NASA-CR-179568	p 140	N89-13256 *
NAS 1.26:183649-PT-2	p 706	N89-25464 *	NAS 1.60:2844	p 114	N89-12569 *	NASA-CR-179639	p 88	N89-11725 *
NAS 1.26:184564	p 806	N89-27907 *	NAS 1.60:2846	p 15	N89-10844 *	NASA-CR-179642-ADD	p 842	N89-29351 *
NAS 1.26:184591	p 408	N89-18499 *	NAS 1.60:2848	p 13	N89-10020 *	NASA-CR-179645	p 412	N89-18550 *
NAS 1.26:184614	p 202	N89-14795 *	NAS 1.60:2855	p 129	N89-12822 *	NASA-CR-180088	p 712	N89-26610 *
NAS 1.26:184624	p 300	N89-16758 *	NAS 1.60:2856	p 153	N89-14213 *	NASA-CR-180899	p 497	N89-20472 *
NAS 1.26:184627	p 153	N89-13411 *	NAS 1.60:2857	p 617	N89-24327 *	NASA-CR-180900	p 54	N89-11192 *
NAS 1.26:184631	p 250	N89-15932 *	NAS 1.60:2858	p 86	N89-12543 *	NASA-CR-181175	p 44	N89-10125 *
NAS 1.26:184666	p 247	N89-15122 *	NAS 1.60:2859	p 227	N89-15900 *	NASA-CR-181342	p 193	N89-13817 *
NAS 1.26:184668	p 266	N89-15684 *	NAS 1.60:2870	p 227	N89-15901 *	NASA-CR-181360	p 234	N89-15106 *
NAS 1.26:184699	p 360	N89-18407 *	NAS 1.60:2873	p 261	N89-16196 *	NASA-CR-181406	p 558	N89-22838 *
NAS 1.26:184700	p 360	N89-18408 *	NAS 1.60:2874	p 248	N89-15930 *	NASA-CR-181644	p 91	N89-12557 *
NAS 1.26:184701	p 360	N89-18409 *	NAS 1.60:2877	p 221	N89-15888 *	NASA-CR-181692	p 59	N89-10601 *
NAS 1.26:184702	p 360	N89-18410 *	NAS 1.60:2886	p 321	N89-16820 *	NASA-CR-181694	p 151	N89-13400 *
NAS 1.26:184719	p 235	N89-15907 *	NAS 1.60:2890	p 301	N89-17568 *	NASA-CR-181696	p 227	N89-15099 *
NAS 1.26:184740	p 473	N89-20981 *	NAS 1.60:2895	p 374	N89-19232 *	NASA-CR-181704	p 194	N89-14376 *
NAS 1.26:184741	p 471	N89-20121 *	NAS 1.60:2907	p 333	N89-16845 *	NASA-CR-181705	p 114	N89-11753 *
NAS 1.26:184742	p 472	N89-20122 *	NAS 1.60:2908	p 615	N89-23468 *	NASA-CR-181721	p 38	N89-10045 *
NAS 1.26:184743	p 472	N89-20123 *	NAS 1.60:2908	p 615	N89-23469 *	NASA-CR-181722	p 116	N89-11756 *
NAS 1.26:184768	p 261	N89-16193 *	NAS 1.60:2911	p 628	N89-24607 *	NASA-CR-181723	p 497	N89-20512 *
NAS 1.26:184780	p 495	N89-20355 *	NAS 1.60:2913	p 507	N89-22568 *	NASA-CR-181725	p 102	N89-11740 *
NAS 1.26:184783	p 356	N89-18046 *	NAS 1.60:2914	p 805	N89-27116 *	NASA-CR-181726-VOL-1	p 690	N89-26013 *
NAS 1.26:184788	p 300	N89-16761 *	NAS 1.60:2918	p 652	N89-25117 *	NASA-CR-181726-VOL-2	p 691	N89-26014 *
NAS 1.26:184789	p 426	N89-19504 *	NAS 1.60:2921	p 807	N89-28034 *	NASA-CR-181743	p 452	N89-20922 *
NAS 1.26:184795	p 222	N89-15893 *	NAS 1.60:2923	p 766	N89-26844 *	NASA-CR-181744	p 450	N89-20093 *
NAS 1.26:184824	p 517	N89-21769 *	NAS 1.60:2932	p 655	N89-25951 *	NASA-CR-181749	p 153	N89-13408 *
NAS 1.26:184868	p 465	N89-20113 *	NAS 1.60:2933	p 747	N89-27634 *	NASA-CR-181762	p 464	N89-20111 *
NAS 1.26:184896	p 517	N89-21772 *	NAS 1.61:1179	p 302	N89-17579 *	NASA-CR-181766	p 627	N89-23920 *
NAS 1.26:184907	p 496	N89-20363 *	NAS 1.61:1202	p 247	N89-15123 *	NASA-CR-181769	p 500	N89-20683 *
NAS 1.26:184948	p 457	N89-20963 *	NAS 1.61:1218	p 713	N89-25673 *	NASA-CR-181787	p 707	N89-25480 *
NAS 1.26:184965	p 480	N89-20146 *	NAS 1.71:LAR-13875-1	p 169	N89-14233 *	NASA-CR-181788	p 714	N89-26683 *
NAS 1.26:184968	p 562	N89-23048 *	NAS 1.71:LAR-14031-1	p 168	N89-14232 *	NASA-CR-181789	p 813	N89-27466 *
NAS 1.26:184992	p 593	N89-23418 *	NAS 1.71:LAR-14049-1	p 614	N89-23466 *	NASA-CR-181790	p 876	N89-29152 *
NAS 1.26:185037	p 713	N89-26679 *	NAS 1.71:MFS-28345-1	p 865	N89-28841 *	NASA-CR-181791	p 876	N89-29154 *
NAS 1.26:185058	p 706	N89-25432 *	NAS-SR-DUAT	p 854	N89-28524 *	NASA-CR-181792	p 813	N89-27468 *
NAS 1.26:185059	p 595	N89-24265 *	NAS-SR-1325	p 831	N89-28509 *	NASA-CR-181793	p 486	N89-21004 *
NAS 1.26:185326	p 592	N89-23411 *	NASA-CASE-LAR-12852-1	p 102	N89-11738 *	NASA-CR-181802	p 472	N89-20125 *
NAS 1.26:185332	p 708	N89-28172 *	NASA-CASE-LAR-13215-1	p 154	N89-14224 *	NASA-CR-181806	p 483	N89-20999 *
NAS 1.26:185347	p 655	N89-25953 *	NASA-CASE-LAR-13438-1	p 128	N89-12786 *	NASA-CR-181808	p 543	N89-22616 *
NAS 1.26:185472	p 792	N89-26886 *	NASA-CASE-LAR-13554-1	p 87	N89-12551 *	NASA-CR-181816	p 519	N89-22574 *
NAS 1.26:185490	p 783	N89-26859 *	NASA-CASE-LAR-13559-1	p 129	N89-12841 *	NASA-CR-181817	p 765	N89-26841 *
NAS 1.26:185491	p 792	N89-26865 *	NASA-CASE-LAR-13875-1	p 169	N89-14233 *	NASA-CR-181819	p 633	N89-24141 *
NAS 1.26:185715	p 751	N89-26832 *	NASA-CASE-LAR-14031-1	p 168	N89-14232 *	NASA-CR-181841	p 745	N89-26815 *
NAS 1.26:185819	p 746	N89-26826 *	NASA-CASE-LAR-14049-1	p 614	N89-23466 *	NASA-CR-181842	p 657	N89-25973 *
NAS 1.26:185892	p 822	N89-28493 *	NASA-CASE-MFS-25962-1	p 693	N89-25242 *	NASA-CR-181868	p 793	N89-26869 *
NAS 1.26:185910	p 824	N89-29321 *	NASA-CASE-MFS-28345-1	p 865	N89-28841 *	NASA-CR-181871	p 794	N89-27674 *
NAS 1.26:185915	p 825	N89-29328 *	NASA-CP-10008	p 15	N89-10849 *	NASA-CR-182133	p 192	N89-13754 *
NAS 1.26:185918	p 825	N89-29328 *	NASA-CP-10012-PT-2	p 866	N89-29789 *	NASA-CR-182164	p 478	N89-20132 *
NAS 1.26:3951	p 251	N89-15187 *	NASA-CP-10019	p 185	N89-13642 *	NASA-CR-182180	p 151	N89-13399 *
NAS 1.26:4036	p 259	N89-15351 *	NASA-CP-2444	p 129	N89-12876 *	NASA-CR-182181	p 109	N89-11750 *
NAS 1.26:4079	p 192	N89-13756 *	NASA-CP-2493	p 351	N89-17298 *	NASA-CR-182203	p 109	N89-12566 *
NAS 1.26:4111	p 783	N89-26860 *	NASA-CP-3020-VOL-1-PT-1	p 453	N89-20925 *	NASA-CR-182207	p 192	N89-13755 *
NAS 1.26:4147-PT-3	p 14	N89-10025 *	NASA-CP-3020-VOL-1-PT-2	p 455	N89-20942 *	NASA-CR-182224	p 109	N89-12587 *
NAS 1.26:4181	p 811	N89-27416 *	NASA-CP-3022-PT-1	p 374	N89-19234 *	NASA-CR-182226	p 109	N89-11751 *
NAS 1.26:4180	p 88	N89-12553 *	NASA-CP-3022-PT-2	p 376	N89-19247 *	NASA-CR-182228	p 234	N89-15107 *
NAS 1.26:4185	p 14	N89-10029 *	NASA-CP-3028	p 558	N89-22891 *	NASA-CR-182232	p 504	N89-20776 *
NAS 1.26:4191	p 83	N89-11898 *	NASA-CP-3027	p 592	N89-23415 *	NASA-CR-182233	p 330	N89-17599 *
NAS 1.26:4192	p 86	N89-12544 *	NASA-CP-3028	p 361	N89-19230 *	NASA-CR-182241	p 193	N89-13819 *
NAS 1.26:4193	p 54	N89-11198 *	NASA-CP-3031-PT-1	p 666	N89-25146 *	NASA-CR-182245	p 452	N89-20921 *
NAS 1.26:4199-VOL-1	p 222	N89-15896 *	NASA-CP-3031-PT-2	p 669	N89-25173 *	NASA-CR-182257-VOL-1	p 633	N89-24139 *
NAS 1.26:4199-VOL-2	p 223	N89-15897 *	NASA-CP-3031-PT-3	p 670	N89-25201 *	NASA-CR-182267	p 478	N89-20134 *
NAS 1.26:4200	p 152	N89-13401 *	NASA-CP-3034-PT-2	p 628	N89-24654 *	NASA-CR-182302	p 784	N89-27672 *
NAS 1.26:4202	p 175	N89-13429 *	NASA-CR-168079	p 428	N89-19779 *	NASA-CR-182303	p 685	N89-26004 *
NAS 1.26:4207	p 261	N89-15485 *	NASA-CR-168617	p 411	N89-18530 *	NASA-CR-182305	p 221	N89-15086 *
NAS 1.26:4208	p 204	N89-14820 *	NASA-CR-174786	p 402	N89-19299 *	NASA-CR-182511	p 133	N89-12923 *
NAS 1.26:4211	p 223	N89-15898 *	NASA-CR-174805	p 177	N89-13438 *	NASA-CR-182513	p 220	N89-15082 *
NAS 1.26:4212	p 204	N89-14821 *	NASA-CR-174966	p 425	N89-18698 *	NASA-CR-182741	p 40	N89-10058 *
NAS 1.26:4217	p 248	N89-15928 *	NASA-CR-174987	p 427	N89-19583 *	NASA-CR-182748	p 58	N89-10528 *
NAS 1.26:4230	p 815	N89-23470 *	NASA-CR-175003	p 402	N89-19300 *	NASA-CR-182818	p 489	N89-20205 *
NAS 1.26:4231	p 615	N89-23471 *	NASA-CR-175096	p 395	N89-19289 *	NASA-CR-182994	p 63	N89-12538 *
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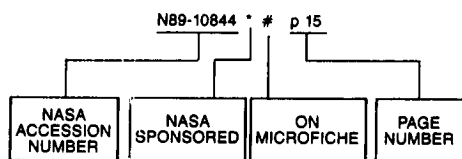
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